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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/763,200	03/09/2001	Hiroyuki Kariya	108650	3613

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EXAMINER

LOPEZ, CARLOS N

ART UNIT	PAPER NUMBER
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1731

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/763,200

Applicant(s)

KARIYA, HIROYUKI

Examiner

Carlos Lopez

Art Unit

1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) 9 and 15 is/are withdrawn from consideration.

5) ☐ Claim(s) ____ is/are allowed.

6) ☒ Claim(s) 1-8 and 10-14 is/are rejected.

7) ☐ Claim(s) ____ is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☒ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7.

4) ☐ Interview Summary (PTO-413) Paper No(s). ____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other:

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-8 and 10-14, drawn to method and apparatus for manufacturing a glass plate.

Group II, claim(s) 9 and 15, drawn to a manufactured sheet glass.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The special technical feature of Group II, a manufactured sheet glass having a maximum strain of 0.07 Kg/mm² or less is not shared by Group I. The method and apparatus claims of group I is not specific means for making the claimed glass sheet product recited in claim 9.

During a telephone conversation with Thomas Pardini on 5/23/03 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-8 and 10-14. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9 and 15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1) Claims 1-8 and 10-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1-8 and 10-14 recites the limitation "the temperature difference" in claim 1 line 8 and claim 11 line 16. There is insufficient antecedent basis for this limitation in the claim.

Claims 4 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: measuring strain distribution using the optical heterodyne method.

In claim 5 lines 3-4, the following limitation is unclear: "temperature distribution in the widthwise direction of the sheet glass after the molding is reduced when sheet glass after molding is subjected to slow cooling..."

In claim 14, there is plurality of glass plate manufacturing method that one of ordinary skill in the art can't clearly ascertain to which glass plate manufacturing method is being sought. Additionally, it is unclear if the claim is completely written,

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2) Claim 14 is rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's admission on page 2. Applicant's admission discloses the claimed liquid crystal device formed by encasing liquid crystal between two glass plates.

3) Claims 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Dockerty (US 3,682,609). Dockerty discloses a draw-down apparatus for manufacturing a glass sheet. Dockerty discloses that manufacturing apparatus comprises forming member 10 of known construction as shown in US 3,338,696. The disclosed forming member 10 as shown in US 3,338,696 ('696) provides for the claimed molding unit (See '696 channel 14) and the claimed drawing unit is deemed as '696's converging sidewalls 27 and 29. Dockerty further provides a temperature control system which provides localized cooling to the forming glass sheet by utilizing a plurality of individually controlled air jets positioned across the width of the glass sheet (Col. 1, lines 52-71). The temperature control system also includes heating elements 64 to heat the air from the controlled air jets being supplied through conduit tubes 36. Dockerty further teaches in Column 5 that *"should the thickness trace indicate that a particular portion of the sheet exhibits an unwarranted thickness, not only are the valves 52 associated with the fluid conduit tubes 36 in such area activated, but also the heating elements 64 within such tubes are energized to heat*

the air supplied thereby to the back surface of the silicon carbide front wall. Accordingly, the heated air retards cooling in such area, causing the viscosity of the glass in such thickened area to decrease, thereby thinning the undesirable thickened portion to provide a smooth uniform thickness across the extent of the sheet." As shown above, a smooth uniform thickness of the glass sheet is dependent on the temperature profile of the glass sheet; a thickened area of the glass sheet results from a localized cooler area in the glass sheet and heating the area would melt the glass sheet in order to provide a uniform thickness glass sheet. Therefore it is deemed that in order to provide a uniform thickness across the extent of the glass sheet, the heating elements 64 inherently provides for a reduction of temperature differences in the widthwise direction. Thus the temperature control unit of Dockerty which is used to reduce undesirable thickened portions of the glass is deemed as the claimed strain reduction unit because it functions by reducing temperature difference in the widthwise direction of the glass sheet.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4) Claims 1-5, 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dockerty (US 3,682,609). As shown above Dockerty provides for a glass plate

manufacturing method using the down-draw method and slowly cooling the glass using heating units, elements 64. Applicant's claim 1, additionally recites a strain reduction process to reduce strain occurring in the glass sheet due to the temperature difference between the edge areas and surface area of the glass sheet. As noted above Dockerty's temperature control system provides for a reduction in the temperature difference across the extend of the glass sheet, claimed widthwise direction. Thus it is deemed that the temperature control system also encompasses a reduction in temperature difference between the claimed edge areas and surface area of the glass sheet. Thus at the time the invention was made it would have been obvious to one of ordinary skill in the art that if an uneven thickness occurs at the surface or the edge of the glass sheet, the heating elements 64 of Dockerty would reduce the temperature differences in order to provide a uniform glass sheet.

As for claim 2-3, during manufacturing of the glass sheet uneven thickness of the glass may occur at any section thus the heating elements 64 may be used to reduce the temperature difference to provide a uniform thickness.

As for claim 5, the temperature control system is provided after the molding of the sheet occurs (See Dockerty Fig. 1).

As for claim 10, the glass plate obtained from formed glass sheet are used for display apparatuses.

5) Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dockerty (US 3,682,609) as applied to claims 1-5 and 7 above and in further view of Shetterly et al (US 5,536,581). Dockerty is silent cooling the glass sheet to its strain point. However

as taught by Shetterly, cooling a glass sheet proximate to above the strain point distributes inner band stresses over a larger area (Col. 2 lns.26-33 and Col. 4, lns.19-26). At the time the invention was made, it would have been obvious to one of ordinary skill in the art to have cooled the glass sheet of Dockerty near its strain point in order to distribute the inner band stresses over a larger area as taught Shetterly.

Allowable Subject Matter

Claims 8 and 13 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The cited prior fails to disclose or reasonably suggest providing controlling unit that provides extension to the edge and surface areas accordance to the temperature difference of said areas as recited in claim 13. Nor does the cited prior art disclose or reasonably suggest increasing the extension of the surface area in accordance with the heat contraction difference occurring between the edge and surface areas in the widthwise direction of the glass sheet as recited in claim 8.

Conclusion

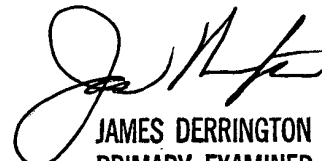
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References A-I in PTO-892 have been cited to show the state of the art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carlos Lopez whose telephone number is (703) 605-1174. The examiner can normally be reached on Mon.-Fri. 8am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (703) 308-1164. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

C.L.
May 27, 2003


JAMES DERRINGTON
PRIMARY EXAMINER
ART UNIT ~~137~~ 1731